GNOME

**W**hen planning a drill, you would ideally draw on a carefully constructed library of realistic scenarios for your area of concern. GNOME (General NOAA Oil Modeling Environment) software guides users in modeling spill trajectories for specific planning scenarios. You can investigate the effects of initial conditions, currents, winds, tides, and diffusion on trajectory results. You can also examine both the forecast trajectory ("best guess") and the uncertainty estimate ("minimum regret") at the same time.

Tailor Your Scenario

Location files are required to run GNOME in its standard configuration. NOAA is developing location files which include a base map, current patterns, and relevant climatology and tidal information. In GNOME's Standard mode, a Wizard asks questions to help you set up the spill scenario. The complexity of the Wizard's questions depends on the specific region being modeled.

Output may be printed as trajectory forecasts at specific times, or viewed on a monitor as a "movie." In addition to graphical output, GNOME estimates the amount of oil beached, still floating, or evaporated at specific times.

GIS users can obtain GIS-compatible output. GNOME's GIS output mode lets you save geo-referenced files of oil location at specific times. This information can then be used by various Geographical Information Systems, or post-processed to provide contours of oil distribution. NOAA provides an extension for ArcView at http://response.restoration.noaa.gov/software/gnome/gnome.html.
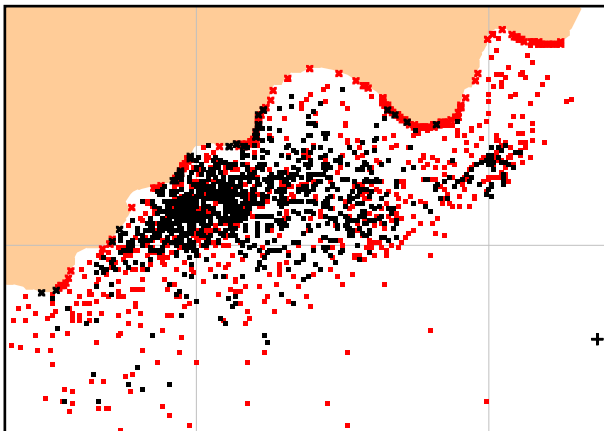
Know Your Limits

Uncertainty estimates are provided as additional trajectory analysis information. By investigating the uncertainty associated with wind, diffusion, and current estimates, you can identify potential threats that might be missed by only looking at the "best guess" trajectory. In the Standard and GIS modes, default values are used for the uncertainty parameters.

Design a Realistic Scenario

Diagnostic Mode allows you to tailor the model to represent real-time data. You may develop and save your own regional model using GNOME's diagnostic mode. This more advanced mode requires hydrodynamic modeling experience and advanced training.

GNOME runs on Macintosh or Microsoft Windows operating systems. The model, location files, and associated documentation can be downloaded directly from the OR&R website. A user's manual, file documentation, and sample problems are available for each location file. GNOME location files have been developed for:

- Apra Harbor, Guam
- Boston and vicinity
- Central Long Island Sound
- Columbia River Estuary
- Delaware Bay
- Galveston Bay
- Kaneohe Bay, Hawaii
- Mobile Bay
- Prince William Sound
- ROPME Sea Area (Arabian Gulf)
- San Diego Bay
- San Juan, Puerto Rico
- Santa Barbara Channel
- Tampa Bay

For additional information: visit the website:
**http://response.restoration.noaa.gov**, send e-mail to gnomewizard@hazmat.noaa.gov, or call: 206/526-6317.

Model Mode: Standard
Estimate for: 05:00 4/20/01
Prepared: 16:21 4/19/01

Scenario Name: Columbia River Scenario
Prepared by: HAZMAT
Contact Phone: (206)526-6324

This trajectory was created using climatological currents from a GNOME Location File,
and is unlikely to represent conditions existing at any particular time at the depicted location.
Use Location Files only to create spill scenarios for training and educational purposes,
not for actual spill response.

46°18'N

46°15'N

46°12'N

46°9'N

124°0'W   123°55'W   123°50'W   123°45'W
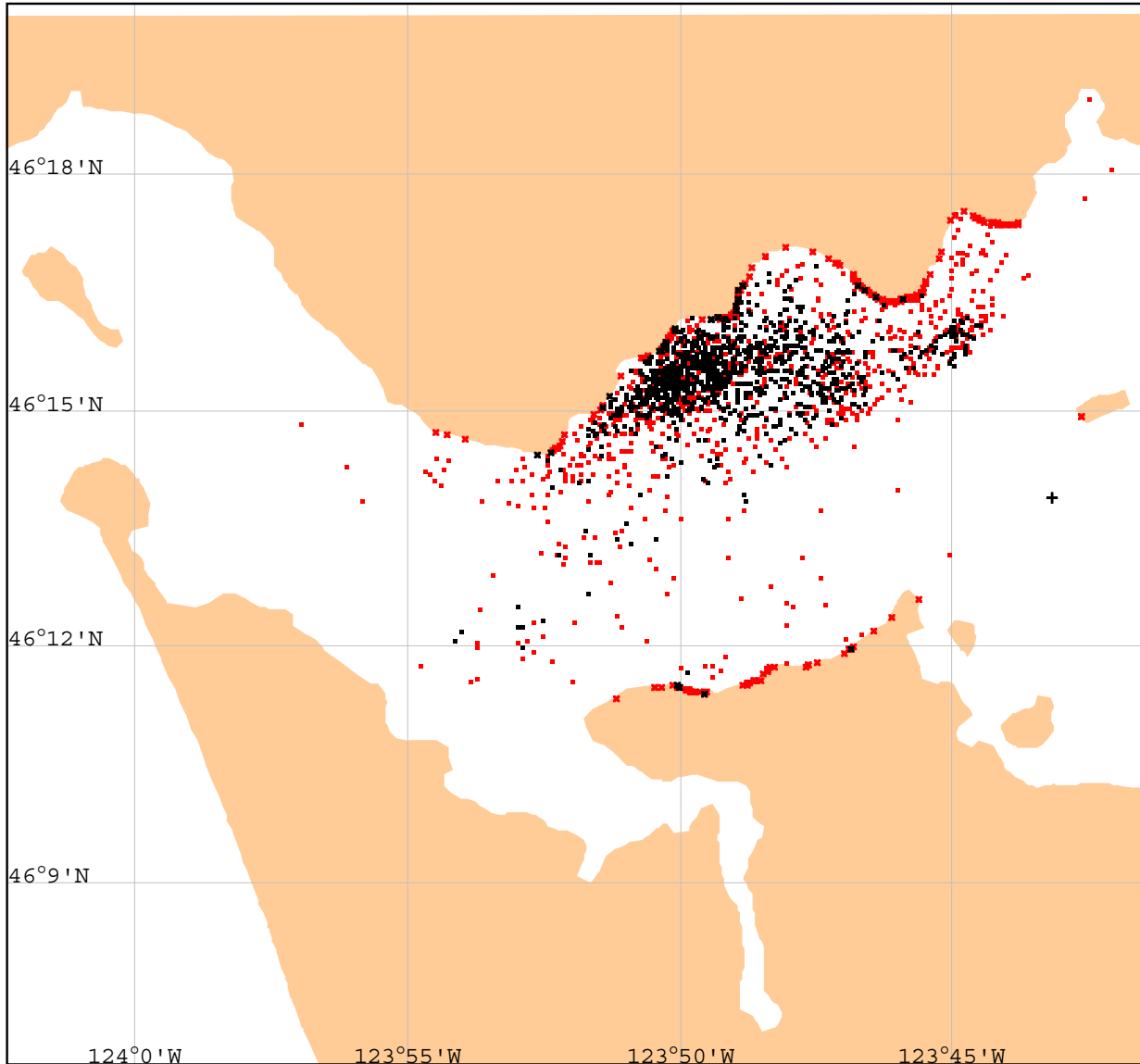
Columbia River Estuary
River flow: 290 kcfs
Wind: Constant 10 knots from SW
Number of Spills: 1

Black Splots: Best Guess, Red Splots: Uncertainty
Splot Mass Balance Totals (Best guess):
  Released: 1000 barrels
  Evaporated and Dispersed: 0 barrels
  Beached: 38 barrels
  Off Map: 0 barrels
  Floating: 962 barrels